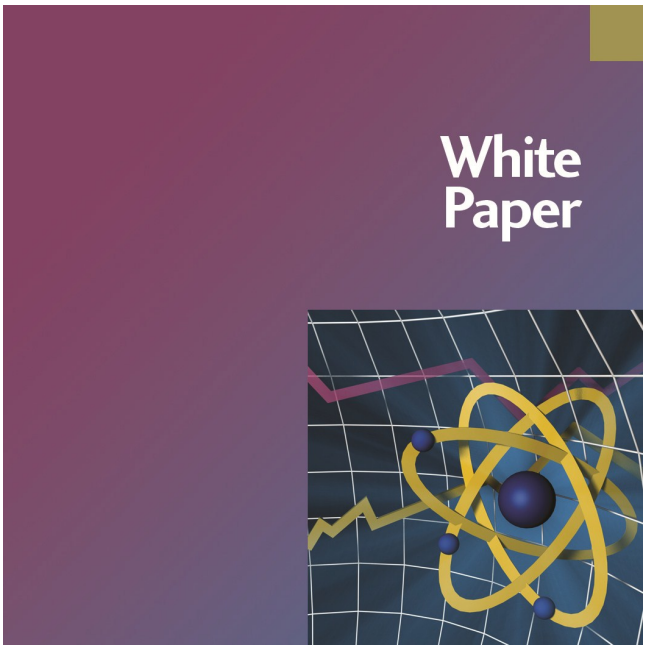

November 2011

Global Nuclear Power Development: Major Expansion Continues

Introduction

The development of energy policy is a balancing act for any nation. Resource availability, projections of electricity demand growth, the age of existing infrastructure and climate change goals are a few of the issues that must be addressed. A country's decision to include nuclear energy in its portfolio can be more complex because nuclear requires a regulatory and industry infrastructure to ensure safety, ongoing access to global nuclear trade through treaties and cooperation agreements, significant capital for new plant construction and public support for peaceful use of the technology. In the aftermath of the Fukushima accident, a few countries—including Germany, Italy and Switzerland—have indicated that that they do not plan further nuclear expansion. But many more plan to proceed with nuclear power development.

The table on page two shows the 30 countries with existing nuclear programs, and includes their plans for new nuclear generation. Fourteen of the countries rely on nuclear power for over one-quarter of their electricity generation. Another 14 countries are moving ahead with new plant construction, and others have longer-term plans for new nuclear development. In rapidly developing countries like China and India, governments are planning a major role for new nuclear generation as they increase basic electrification and keep up with demand growth from economic expansion.

The case studies in this paper provide examples of how different countries have balanced their resources and needs and determined that nuclear generation should be a part of their energy portfolios. Even in the post-Fukushima environment, this robust growth is expected to continue.

Global Nuclear Facts

- 433 nuclear plants operating in 30 countries
- 14 percent of the world's electricity provided by nuclear power
- 65 new nuclear plants under construction in 14 countries
- 152 new nuclear plants on order or planned, with an additional 350 proposed

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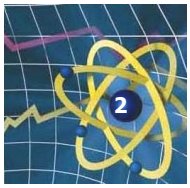


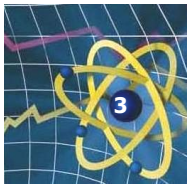
Nuclear Generation by Country

		Operating		Under Construction		Planned	Proposed
Country	*2010 Nuclear Fuel Share (Percent)*	*Units*	*Capacity (MW)*	*Units*	*MW*	*Units*	*Units*
France	74	58	63,130	1	1,600	1	1
Slovakia	52	4	1,816	2	782	0	1
Belgium	51	7	5,927	0	-	0	0
Ukraine	48	15	13,107	2	1,900	2	11
Hungary	42	4	1,889	0	-	0	2
Armenia	39	1	375	0	-	1	0
Sweden	38	10	9,298	0	-	0	0
Switzerland	38	5	3,263	0	-	0	0
Slovenia	37	1	688	0	-	0	1
Czech RP	33	6	3,678	0	-	2	1
Bulgaria	33	2	1,906	2	1,906	2	0
Korea Rep.	32	21	18,698	5	5,560	6	0
Japan[1]	29	50	44,215	2	2,650	10	5
Finland	28	4	2,716	1	1,600	0	2
Germany	27[2]	9	12,068	0	-	0	0
Spain	20	8	7,567	0	-	0	0
U.S.	20	104	101,240	1	1,165	7	27
Romania	20	2	1,300	0	-	2	1
Taiwan, China	19	6	4,982	2	2,600	0	1
Russia	17	32	22,693	11	9,153	14	30
U.K.	16	18	9,920	0	-	4	9
Canada	15	18	12,569	0	-	3	3
Argentina	6	2	935	1	692	2	1
South Africa	5	2	1,800	0	-	0	6
Mexico	4	2	1,300	0	-	0	2
Netherlands	3	1	482	0	-	0	1
Brazil	3	2	1,884	1	1,245	0	4
India	3	20	4,391	6	4,194	17	40
Pakistan	3	3	725	1	315	1	2
China	2	15	11,078	27	27,230	51	120
Iran	n/a	1	915	0	-	2	1
Total		**433**	**366,555**	**65**	**62,592**	**127**	**272**

Definitions
Operating: connected to the grid
Under Construction: first safety-related concrete poured
Planned: approvals, funding or major commitment in place, operational in less than 10 years
Proposed: specific program or site proposed, operational in approximately 15 years

Sources: International Atomic Energy Agency and World Nuclear Association

[1] Japan's future nuclear energy policy still under debate and review since the Fukushima accident and no firm decisions have been announced.
[2] Figure is based on 17 operating units.



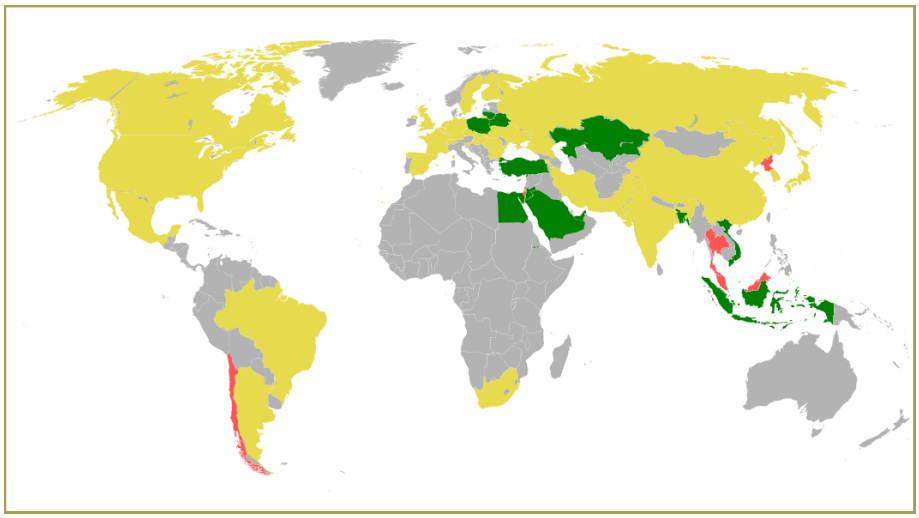
As shown in the map, countries with existing nuclear programs are not the only ones planning to build nuclear plants. Some governments, like those in the United Arab Emirates and Poland, have made firm commitments to develop the infrastructure needed for a nuclear program. Other countries like Thailand and Chile are keeping nuclear energy as an option for the future by announcing proposals for new reactors. Countries will continue to evaluate policy and energy options as time passes and make appropriate decisions at the national level. For many nuclear energy will be a part of their clean energy future.

Countries with operating commercial reactors

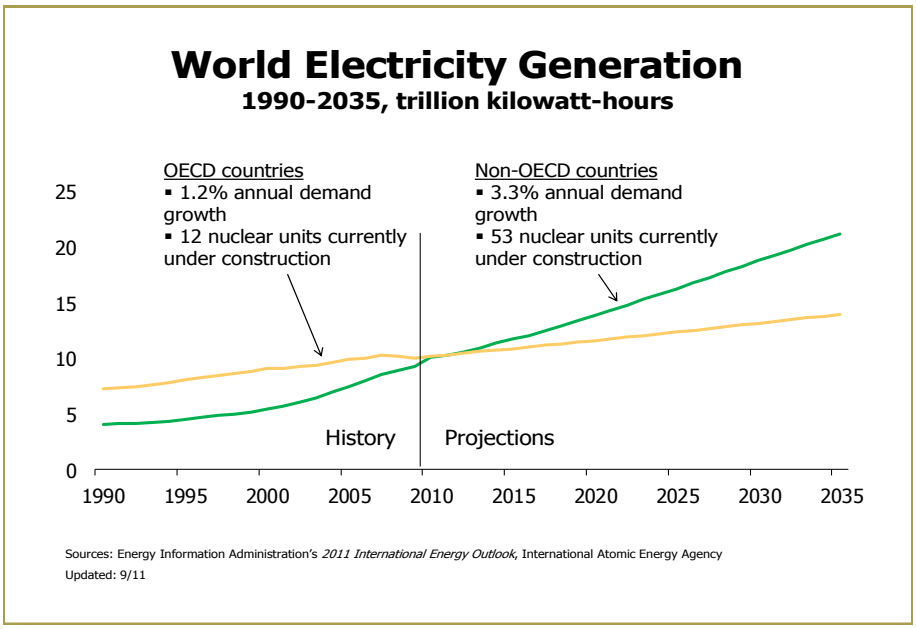
Emerging nuclear countries with planned reactors

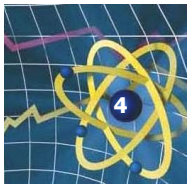
Emerging nuclear countries with proposed reactors

Source: World Nuclear Association



As the current status of new nuclear construction demonstrates, the majority of nuclear energy growth is occurring in non-OECD countries. OECD countries will build nuclear plants as they seek to replace aging generating fleets and reduce carbon emissions. But non-OECD countries are building electricity generation on a large scale to fuel high economic growth and to expand residential electrification. This presents many opportunities for U.S. suppliers to take advantage of markets aboard.





Select Country Profiles

Brazil

From the beginning of its nuclear program in the 1970s, Brazil has remained supportive of nuclear energy and its role in the country's generation portfolio. Brazil has two operating nuclear units, Angra 1 and 2, near Rio de Janeiro, as well as facilities for uranium enrichment and fuel fabrication in Resende that serve the two domestic reactors. The planning for the first unit at Angra, a 520 MW unit designed by Westinghouse, started in the 1970s. Brazil signed a deal with West Germany for eight 1,300 MW units in the late 1970s, but economic stagnation and lower demand growth halted those plans. In 1995, construction on Angra 2 was restarted with the help of additional German investment. The 1,275 MW reactor was brought online in 2000.

Angra 3 under construction. Photo courtesy Eletronuclear.

In 2006 Brazil's president, Luis Lula de Silva, announced plans to build a third unit at Angra and four additional 1,000 MW plants as part of Brazil's 2030 national energy plan. The energy plan recognized the vulnerability of the country's dependence (over 80 percent) on hydro power for electricity. Support for the nuclear agenda continues under President Dilma Rousseff, the former Minister of Mines and Energy. The National Nuclear Energy Commission granted a construction license for Angra 3 in May 2010, and construction at the site began shortly thereafter. Brazil expects to have the reactor operational at the end of 2015.

Eletronuclear, Brazil's government-controlled nuclear utility, is in the process of siting another new unit in Recife in northeastern Brazil and is working with the national energy research corporation on other potential sites for more units. To help with the financing of the nuclear projects, Brazilian leaders are contemplating private investment in the country's nuclear program, which is currently prohibited. In June 2011, the Senate passed a measure that provides economic incentives to the government-owned Eletrobras, but also national and international equipment partners. The incentives include an exemption from the industrial production tax and relief from certain tariffs on imported materials and goods related to energy generation and nuclear-specific technologies.

Since the accident at Fukushima, Brazil has reexamined the safety of the country's operating reactors. At the conclusion of this review, the government reaffirmed its plans to move forward with new nuclear development and remains committed to a goal of 4-8 GW of new nuclear by 2030. Brazil's hydro power resources are close to fully developed and the country's leadership recognizes that without reliable, clean baseload power, it will be unable to sustain its economic growth and address growing climate concerns.

China

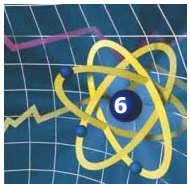
Today, China has 14 operating reactors that supplied two percent of its electricity generation in 2010. The first commercial reactor, a French-designed PWR, came online in 1994.

China has experienced an astounding average 10 percent GDP growth annually for the past three decades. Consequently, China's energy demand has been increasing dramatically. China's latest energy demand projections are for 4 percent annual growth. China's electricity portfolio is dominated by coal, which provides over 70 percent of generation. Hydro produces about 15 percent of electricity with oil, nuclear and renewables making up the remainder. China recently overtook the United States as the world's largest contributor to carbon emissions, and the U.S. Energy Information Administration predicts Chinese emissions will continue to grow by 2.7 percent a year in the coming decades.

Construction of Westinghouse AP1000 reactors at the Haiyang Nuclear Power Plant, Shandong, China. Photo courtesy Westinghouse Electric Company.

Nuclear energy is a key part of China's strategy to keep up with growing energy demand. Of the 65 plants currently under construction around the world, 27 are in China. China's government has plans to increase nuclear incrementally—80 GW by 2020, 200 GW by 2030 and 400 GW by 2050. China selected foreign reactor designs like Westinghouse's AP1000 and AREVA's EPR for the initial phases of this expansion. Due to emission concerns, China is also rapidly pursuing renewables. For example, China is the leading exporter of solar panels and has the world's largest installed wind power capacity of over 41,000 MW. China is planning to fabricate and supply its own fuel assemblies, develop high temperature gas reactors and fast breeder reactors, and maximize its domestic nuclear supply chain for construction and eventual export.

Following the Fukushima accident, China ordered safety inspections on all operating plants and those under construction. The operating plant inspections were successfully completed in June 2011. The inspections on plants under construction are still underway and should be completed by fall of 2012. The Ministry of Environmental Protection already has issued updated standards for reporting nuclear accidents and new protocols for the management of radioactive materials. China also halted the regulatory approval process pending the outcome of inspections. The approvals are predicted to resume in 2012 as part of a plan to centralize China's regulatory authority for nuclear plants, but this pause will delay some short-term construction goals. But even with some short-term reductions in China's construction efforts, China's ambitious plans still make it the world's top nuclear construction market.



Germany

Prior to March 2011, Germany had 17 operating nuclear reactors that supplied over one-quarter of German electricity in 2010. The first commercial nuclear reactor came online in 1975 in West Germany. Siemens-KWU continued building reactors in West Germany through the late 1970s and 1980s with the last reactor coming online in 1989. Following the Chenobyl accident in 1986, public sentiment changed dramatically and the German government announced its first attempt at a nuclear phase-out with a demand that all plants close by 1996.

Political maneuvering among government coalitions and pressure from the electric utilities kept the nuclear plants running past the original phase-out date of 1996. A compromise agreement was reached in 2000 that banned new nuclear plants and capped the lifetime production of the existing 19 reactors to 2,623 billion kWh, which equals an average lifetime of about 32 years. This resulted in the closing of only two nuclear units. Domestic pressure on the gradual phase-out policy increased as time passed and closures became imminent. In 2007, reports by the IAEA and Deutsche Bank warned the government that carbon emission reduction targets would be missed if the nuclear phase-out proceeded, despite the massive expansion of solar and wind energy. Germany would have had to expand domestic coal usage and rely on imports of electricity from EU neighbors or Russian natural gas to make up the lost baseload generation.

In September 2009, a new Christian Democrat and Liberal Democrat coalition government was elected, partially because of their popular platform of overturning the nuclear phase-out policy. The new government issued nuclear plants license extensions, but imposed a hefty tax on uranium used to fuel the reactors. Proceeds from this tax yield over two billion Euros per year for spending on the development of renewable resources.

Following the Fukushima accident, Chancellor Angela Merkel reversed her position in an unsuccessful attempt to garner additional political support during contentious regional elections. She announced that all plants built before 1980 (8 of the 17 operating units) would be shut down immediately. A few months later, the government announced that it was reinstating a phase-out policy, which held that all the remaining operating nuclear plants would close by 2022. German utilities, E.ON and RWE, began cutting profit outlooks, restructuring and laying off employees, and selling assets in response to the financial impact of the closures. The two utilities have filed suit against the government over the fuel tax on the remaining reactors in light of the rapid phase-out policy. Industrial users, like the pharmaceuticals group Bayer, have threatened relocation if international competitiveness is compromised by increases electricity cost or reliability.

Although the government plans to expand renewables from 16 percent to 35 percent of electricity generation by 2020, the plan to replace nuclear energy would require an additional 23 gigawatts of new gas and coal generation in this

timeframe. Many EU neighbors fear the possibility that Germany's phase-out will expand fossil fuel use, raise the continent's power prices and create grid instability. Only time will tell how the German government will cover the gap and the effects this phase-out will have on the European electricity market.

India

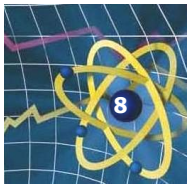
India faces large growth in demand for electric power from industrial and residential growth. India is working to extend electrification to 400 million citizens without access to power. Currently coal provides almost 60 percent of India's electricity. Coal use is expected to expand, but India also recognizes the problem of increasing carbon emissions. India must also upgrade its transmission and distribution infrastructure. The current transmission system suffers an average 27 percent loss of power generated.

Kudankulam units 1 and 2 at Tamil Nadu, India. These new, Russian-built power reactors began supplying electricity in 2011. Photo courtesy Atomstroyexport.

After refusing to sign the 1968 Nuclear Non-Proliferation Treaty and developing a nuclear weapons program in the 1970s, India was banned from any nuclear trade for the next 30 years. This lack of international cooperation slowed the development of India's commercial nuclear program and forced the country to develop an independent, indigenous nuclear energy industry. India's isolation from global nuclear trade led to fuel supply problems, so India developed an independent fuel cycle, including reprocessing. To further protect against fuel shortages, India is developing fast breeder reactors and is at the forefront of developing a thorium-based reactor fuel cycle (thorium is abundant in India). Today India has 20 operating commercial reactors supplying 3 percent of its electricity and six reactors under construction, including one prototype 500 MW fast breeder reactor.

In 2008, other nations gained access to India's markets after India signed a civilian nuclear deal with the United States and the Nuclear Suppliers' Group loosened restrictions on nuclear trade with India. India's ambitious plans to expand nuclear energy use include 17 reactors planned and possibly 40 plants proposed for longer term development; these numbers are eclipsed only by China's nuclear construction plans. Contracts have been negotiated with Russia and France's AREVA for future nuclear facilities. India is also hoping to sign contracts with Westinghouse and GE-Hitachi for nuclear units but these deals are awaiting resolution of nuclear liability issues. The Nuclear Power Corporation of India Ltd. (NPCIL) is responsible for building and operating all nuclear power plants in India. NPCIL is largely government-owned but, unlike some other state corporations, does allow minority investment in nuclear plant projects.

Following the Fukushima accident, the NPCIL set up four task forces to manage India's response to the accident and evaluate safety risks. Interim task force reports indicated operating plants are safe, but provided recommendations for



safety enhancements. The environment ministry has delayed approval of new nuclear reactors to assure the safety of the new units, especially those on coastal sites. This pause in approvals is partly the result of India's plan to re-structure its regulatory oversight to make its regulatory body more independent.

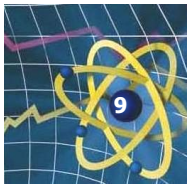
Poland

Poland does not have any operating commercial nuclear reactors but is embarking on ambitious plans to add nuclear power plants to the country's portfolio. Poland has the largest coal reserves in the European Union, and coal provides over 90 percent of Poland's electricity. Although Poland imports some Russian gas, it has traditionally been a net exporter of electricity. Poland is facing high demand growth projections along with stringent EU carbon limits—making nuclear power an attractive option for new generation.

Recognizing the infrastructure and regulatory needs of nuclear generation, the Polish government began in 2005 with long-term plans for new nuclear reactors. The Polish cabinet's decision to pursue nuclear power was bolstered by a 2009 report by the Ministry of Economy that named nuclear the most economical generation choice to reduce national carbon emissions. Soon after, the council of ministers issued a resolution calling for the preparation of two new nuclear sites. Estimates predict these facilities will supply 15 percent of the country's electricity by 2030. The Polish government adopted legislation in May 2011 that established a regulatory framework for the industry, giving the National Atomic Energy Agency the authority to oversee reactor construction, operation and used fuel management.

APR-1400 plants under construction at Shin-Kori, Republic of Korea. Photo courtesy Korea Hydro & Nuclear Power Co., Ltd.

The state-owned power group, Polska Grupa Energetyczna SA (PGE), is moving forward with plans for two nuclear plants in Poland that will generate 3,000 MW each. The first new reactor is expected to be operational by 2022 and the second by 2030. Although PGE will finance the majority of the projects, Poland is also working with a consortium of foreign investors. PGE expects to announce a call for tenders in late 2011, and has been working on strategic relationships with key global nuclear suppliers. Construction is slated to begin in the 2016 timeframe. Beyond plans for domestic reactors, PGE is also involved in a consortium with Estonia, Latvia and Lithuania for a Baltic regional reactor to be built in Lithuania. Negotiations over financing and ownership structures are underway. Poland expects to make a decision about participation in the regional project by the end of 2011. Since Fukushima, Poland has expressed support for nuclear energy and is moving forward with plans for the new units. In looking at all the energy alternatives available, Poland chose nuclear power recognizing the large-scale and carbon-free generation it offers.



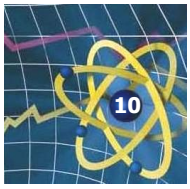
Republic of Korea (South)

South Korea is moving forward with ambitious plans for expanded domestic nuclear capacity, and aims to be among the top global nuclear exporters. South Korea has 21 operating reactors that supply nearly one-third of the country's electricity. Five reactors are under construction and South Korea plans to continue to add reactors to achieve its goal of generating 60 percent of its electricity from nuclear by 2030.

Beginning with the first reactor placed in service in 1978, the South Koreans have steadily added nuclear generation, adding 20 more reactors to the grid between 1983 and 2011. The early reactors were a mix of Combustion Engineering (now Westinghouse), Framatome (now AREVA), and Candu technologies. The South Koreans worked to develop a large domestic nuclear and manufacturing network to support domestic construction. Starting in the mid-1990s, the Koreans began designing their own reactor, the OPR-1000, based largely on Combustion Engineering-Westinghouse technology. The South Koreans have achieved major gains with their nuclear construction programs, with a 37 percent cost reduction from 1995 to 2011 as lessons-learned were incorporated into construction of subsequent units.

South Korean plans are now focused on nuclear exports with the development of a third generation design, the APR-1400. Two APR-1400 plants are currently under construction in South Korea, with the first to come online in late 2013. In December 2009, Korea Electric Power, Samsung and Hyundai won a bid to build the first nuclear plants in the United Arab Emirates, beating competing bids from the French and an American-Japanese consortium. The $20 billion UAE order is for four nuclear reactors, which should come online between 2017 and 2020. The South Korean government has announced ambitious nuclear export goals with plans to secure $400 billion worth of contracts by 2030. South Korea's Doosan Heavy Industries, working with major suppliers like Westinghouse, is tapping into global demand for large nuclear components, supplying both the U.S. and China with reactor pressure vessels and steam generators. The Korea Atomic Energy Research Institute is also developing the SMART (System Integrated Modular Advanced Reactor), a 333-MW small reactor designed for applications like industrial process heat and desalination. The SMART reactor design license is planned for approval in 2012, and will broaden the Korean export portfolio of nuclear technologies.

Following the Fukushima accident, South Korea performed safety inspections at all of its operating reactors. The government has pledged an investment of $1 billion over the next five years to further bolster nuclear safety. For example, Korea Electric Power Company will increase the height of the sea wall at its Kori plant to lessen the impacts of large tsunamis. Driven by resource scarcity and high electricity demand growth projections, South Korea, following Japan's model, has built a domestic nuclear generation base and has made nuclear a main driver for national economic growth and competitiveness.

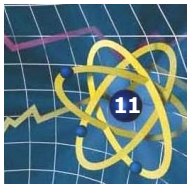


South Africa

South Africa is home to the only nuclear power facility in Africa—the two unit plant at Koeberg, just north of Cape Town, which supplies about 5 percent of South Africa's electricity. The twin reactor plant was built in the early 1980s, with Unit 1 placed online in 1984 and Unit 2 in 1985. Both reactors are owned and operated by the South African public utility Eskom. South Africa's economy and electricity demand have grown steadily in the post-apartheid era as South Africa saw trade embargoes lifted and increased global market access in the mid-1990s. Industrial power demand is growing as South Africa continues to develop its manufacturing base, especially to meet increased export opportunities. South African residential electricity demand is also growing quickly, as the country seeks to provide power to the 40 percent of residents who currently have no electricity. Some analyses project that demand could double in the next 20 years. South Africa is heavily reliant on domestic coal, accounting for 90 percent of generation. Demand growth and fossil reliance are spurring the South Africans to look at additional nuclear reactors for baseload electricity. The Nuclear Energy Act of 1999 created the South African Nuclear Energy Corporation (NECSA) to promote nuclear energy research, development and innovation.

In early 2007, Eskom approved a plan to build another reactor at the Koeberg site. At the same time, the government's Nuclear Energy Corporation announced aggressive plans to increase nuclear capacity to almost 30 percent of electricity (about 27,000 MWe) by 2030. In 2008, the South African Department of Minerals and Energy published a nuclear energy policy that outlined objectives that included new nuclear deployment, promotion of nuclear's energy security and climate mitigating attributes and recommendations for further development of the fuel cycle. Along with support for large-scale reactor development, South Africa had also been developing a small (165 MW) high-temperature gas reactor, the Pebble Bed Modular Reactor (PBMR). Facing severe pressure on government spending, South Africa announced in September 2010 that it would no longer invest in the PBMR project.

South Africa's commitment to nuclear remains strong, even after the Fukushima accident. In late March, the Cabinet ratified the Integrated Resource Plan for the country's energy sector through 2030, which includes plans for 25 percent of new energy to be nuclear. The plan calls for 9.6 additional gigawatts of nuclear capacity by 2030, with the first new plant delivering power by 2023. Financing will continue to be an issue for the South African government in light of the global credit crisis and the capital investment needed in the energy sector. Although private investment is allowed in the renewable sector, the government is planning to change current law to allow private investment in the nuclear sector. With the growth projections and climate pressures that South Africa faces, the government recognizes that it cannot afford to take any large-scale electricity generation options off the table.



Sweden

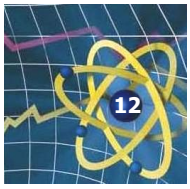
Sweden saw a dramatic shift in nuclear policy in recent years with the government's reversal of the country's long-standing nuclear phase-out policy and ban on new plants. Sweden's electricity generation portfolio is one of the cleanest in Europe with 43 percent of electricity from hydro power and 38 percent from 10 nuclear reactors, placing Sweden seventh in the world for largest percentage of electricity from nuclear energy. From the 1960s through the 1980s, Sweden built 12 nuclear units that complemented the hydro generation, which varies by winter precipitation levels.

Shortly after the Three Mile Island nuclear accident, the Swedish government called for a public referendum to consider phasing-out nuclear power. The country voted to allow the existing reactors to operate as long as they were economically viable (until the end of normal licensed operation, which was assumed to 25 years at that time). The Swedish Riksdag (Parliament) then voted to ban any further expansion of nuclear power and established a plan to close the 12 existing plants by 2010, which would have closed some units even before their operating license expiration.

Ringhals Nuclear Power Station, Varberg, Sweden, produces 20 percent of Sweden's electricity. Photo by Annika Örnborg, courtesy Vattenfall AB.

By the 1990s, Sweden's national nuclear phase-out policy was a subject of intense debate. In 1994, a government-appointed energy commission explicitly stated that a total phase-out of nuclear power by 2010 would be nearly impossible because of the environmental and economic issues associated with replacing the nuclear generation. Political negotiations continued around nuclear policy and, as a result, the two Barsebäck units in southern Sweden were closed in 2005. Despite the looming 2010 closure, Swedish utilities invested heavily in the existing plants to make up for market growth. Through power uprates, Sweden added the equivalent of a new nuclear plant to the grid (1,050 MWe). The pivotal moment in Swedish nuclear policy occurred in February 2009 when the Swedish coalition government formally announced its plan to reverse the
28-year-old-ban on new nuclear plants and allow the continued operation of the existing fleet. The Riksdag voted to repeal the phase-out policy in June 2010 as one way to ensure adherence to the stringent European Union carbon emission reduction goals. The new nuclear policy stipulates that new plants will only be built at existing nuclear sites once the original operating units are retired.

Sweden has taken steps to address nuclear waste management and is moving forward on plans for a national geologic repository for high-level nuclear waste. After an intense campaign to win the bid for the repository site (and the economic benefits that come with such a facility), the Swedish fuel management company SKB in 2009 selected the town of Forsmark. Under Swedish law, any municipality can veto a repository planned for its jurisdiction, so local public support was critical. Currently, SKB is working on site preparations and the



regulatory applications for the facility with plans for full construction (pending regulatory approval) to begin in 2015 and the site to be operational by 2023.

Since the Fukushima accident in March 2011, the Swedish government has remained supportive of the national nuclear policy to allow new build and the role that nuclear must continue to play in the European Union's generation portfolio. As part of the European Union, the 10 nuclear reactors in Sweden are undergoing risk and safety assessments the EU energy ministers agreed upon in March 2011. The Swedish regulator will facilitate these assessments and communicate results back to the European Commission in late 2011.

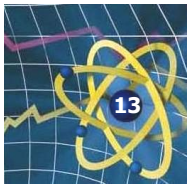
United Kingdom

The United Kingdom has 18 commercial nuclear reactors in operation that supply 16 percent of the country's electricity as well as an independent fuel cycle that includes reprocessing. A large fleet of Magnox reactors were built through the late 1950s and 1960s, followed by 14 advanced gas-cooled reactors (AGR) and one PWR. Nuclear electricity peaked at 25 percent of generation in the late 1990s but retirements of older reactors have brought that percentage down to 16 percent today. The last 3 Magnox reactors are scheduled to be closed at the end of 2012 and the 14 AGRs are set to be closed between 2016 and 2023. The bulk of the U.K.'s electricity is produced with natural gas (46 percent) and coal (28 percent).

Policymakers are contemplating ways to keep up with demand growth and replace an aging nuclear fleet, while trying to reduce carbon emissions to meet strict EU standards. Recognizing this dilemma, the U.K. government undertook a national energy policy consultation in 2006, which concluded that the U.K. would build new nuclear units to replace the retiring nuclear fleet and embark on a significant deployment of renewable energy generation. Through 2007 and 2008, the government issued a series of nuclear policy white papers and launched a public consultation on the plans. The government established a new office within the Department of Energy called the Office for Nuclear Development to help coordinate and support the construction process. Although it was stated clearly in 2006 that nuclear development would not receive any government subsidies, to attract plant developers, the government identified sites that would be acceptable for new nuclear development.

Recognizing the potential market opportunities in the U.K., EDF moved aggressively, acquiring British Energy in early 2009. EDF plans to build 4 EPR reactors at the Sizewell and Hinkley Point sites (both with existing nuclear facilities), with plans for the first reactor (at Hinkley Point) to be connected to the grid in early 2018. A joint venture of RWE and E.ON U.K., known as Horizon Nuclear Power, has also acquired 2 nuclear sites and is planning to have 6,000 MW of nuclear operational by 2025. A third consortium of Iberdrola and GDF Suez, called NuGeneration, is planning to build up to 3,600 MW at the existing Sellafield nuclear site.

The U.K.'s energy policy remains supportive of nuclear power after the accident at Fukushima. As members of the European Union, the existing units under-



went safety and risk assessment tests in the summer of 2011. U.K. operators are planning to make some safety enhancements, including strengthening flood defenses and loss of off-site power procedures. The U.K. has elected to close the MOX fuel facility at Sellafield since the plant's main customer for MOX fuel was Japan. In late July 2011, the British Parliament ratified the "National Policy Statement for Nuclear," which confirms the government's decision to continue moving ahead with new reactors and provides the industry with political confidence for nuclear.

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